

FOCUSED BEAM CUTTING OF MATERIALS

ABSTRACT OF THE DISCLOSURE

Methods are disclosed for producing a prosthesis by at least partially cutting a material segment with a beam. The cutting is preferably controlled by a process control unit to cut the material segment along a pattern to generate a target image and size. In some embodiments, the material segment includes a tissue segment separated from an organism. An apparatus for cutting tissue comprises a tissue segment, a support platform, a beam generator and a process control unit. The beam generator is oriented to direct a beam at the tissue segment supported by the support platform. The process control unit is operably connected to the support platform. The improved cutting approaches can be used in the formation of heart valve prostheses.

1. A method for producing a prosthesis, comprising: providing a material segment; directing a beam at the material segment to cut the material segment along a pattern to generate a target image and size; and controlling the cutting of the material segment by a process control unit.

2. The method of claim 1, wherein the material segment includes a tissue segment separated from an organism.

3. An apparatus for cutting tissue, comprising: a tissue segment; a support platform; a beam generator oriented to direct a beam at the tissue segment supported by the support platform; and a process control unit operably connected to the support platform.

4. The apparatus of claim 3, wherein the improved cutting approaches can be used in the formation of heart valve prostheses.